



EH&S NA TC Chapter Meeting Summary and Minutes

NA Spring Standards Meeting
Thursday, March 28, 2024
9:00 AM – 3:00 PM Pacific
SEMI HQ, Milpitas, CA

TC Chapter Announcements

Next TC Chapter Meeting
Thursday, July 11, 2024 in conjunction with SEMICON West Meetings at the Moscone Center, San Francisco, CA.
Check www.semi.org/en/standards for the latest update.

Table 1 Meeting Attendees

Co-Chairs: Chris Evanston (Salus Engineering International), Sean Larsen (Lam Research), Bert Planting (ASML)
SEMI Staff: Kevin Nguyen (SEMI)

<i>Company</i>	<i>Last Name</i>	<i>First Name</i>	<i>Company</i>	<i>Last Name</i>	<i>First Name</i>
Axcelis Technologies	Brick	Clifton	KLA	McDaid	Raymond
<i>TUV</i>	<i>Chan</i>	<i>Lennard</i>	<i>SCREEN</i>	<i>Nishimura</i>	<i>Takayuki</i>
<i>Cymer</i>	<i>Choi</i>	<i>Joyce</i>	ASML	Pennings	Wilbert
<i>Lam Research</i>	<i>Crane</i>	<i>Lauren</i>	Tokyo Electron	Petraszak	Andrew
<i>Salus Engineering</i>	<i>Evanston</i>	<i>Chris</i>	ASML	Planting	Bert
Applied Materials	Faust	Bruce	<i>Texas Instruments</i>	<i>Schwab</i>	<i>Paul</i>
<i>Cymer, ASML</i>	<i>Frankfurth</i>	<i>Mark</i>	<i>Safety Guru</i>	<i>Sklar</i>	<i>Eric</i>
<i>Nikon Precision</i>	<i>Girlea</i>	<i>Lucian</i>	<i>Muratec</i>	<i>Tominaga</i>	<i>Tadamasa</i>
<i>Safety Maven</i>	<i>Greenberg</i>	<i>Cliff</i>	Tokyo Electron	Tomito	Yugo
<i>Applied Materials</i>	<i>Gross</i>	<i>Ben</i>	<i>Veeco</i>	<i>Trout</i>	<i>Steve</i>
Teradyne	JJ	Kim	Tokyo Electron	<i>Tsuru</i>	<i>Mark</i>
Nikon	Kelly	Padraig	<i>ASML</i>	<i>Yakimow</i>	<i>Byron</i>
<i>Lam Research</i>	<i>Larsen</i>	<i>Sean</i>	Applied Materials	Wong	Carl
Tokyo Electron	Mashiro	Supika	Tokyo Electron	Wotta	Michael

Italic indicates online participant. **Bold** indicates in person participant.

Table 2 Leadership Changes

<i>WG/TF/SC/TC Name</i>	<i>Previous Leader</i>	<i>New Leaders</i>
None		

Table 3 Committee Structure Changes

<i>Previous WG/TF/SC Name</i>	<i>New WG/TF/SC Name or Status Change</i>
None	



Table 4 Ballot Results

<i>Document #</i>	<i>Document Title</i>	<i>TC Chapter Action^{#1,#2}</i>
6980	Line Item Revisions to SEMI S2-0821Eb, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Delayed Revision Related to Flammable Substances)	Refer below
	Line Item 1 - Delayed Revision Related to Flammable Substances	Passed with Technical Changes, Ratification Ballot to be issued.
7108A	Line Item Revision to SEMI S2-0821Eb, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Delayed Revision Related to Safety Labels)	Refer below
	Line Item 1 - Delayed Revision Related to Safety Labels	Passed with Technical Changes, Ratification Ballot to be issued.
7134	Revision to SEMI S8-0218, Safety Guideline for Ergonomics Engineering of Semiconductor Manufacturing Equipment	Failed and Returned to TF for rework
7158	Line Item Revision to SEMI S2-0821Eb, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Delayed Revisions related to lifting equipment and hinged loads (§§ 5.2, 18))	Refer below
	Line Item 1 - Delayed Revisions related to lifting equipment and hinged loads (§§ 5.2, 18.6)	Passed with Technical Changes, Ratification Ballot to be issued.
7159	Reapproval of SEMI S25-0319, Safety Guideline for Hydrogen Peroxide Storage & Handling Systems	Failed

#1 For those **Passed** ballots for which the Ratification Ballots are approved, the ballots and line items will be submitted to the ISC Audit & Review Subcommittee for procedural review. For those **Passed** ballots for which the Ratification Ballots are disapproved, the ballots and line items will be returned to the NA EHS TCC for further discussion at its next meeting.

#2 The **Failed** ballots regarding SEMI S8 was returned to the originating task forces for re-work and re-balloting. For the **Failed** ballot regarding SEMI S25, Kevin Nguyen (SEMI Staff) was assigned the action item of notifying the Liquid Chemicals TC (NA and Europe) of the outcome of the ballot and inviting participation if there is interest in supporting further work.

Table 5 Ratification Ballot Results

<i>Document #</i>	<i>Document Title</i>	<i>ISC A&R Action^{#1,#2}</i>
None		

#1 **Passed** Ratification ballots will be submitted to SEMI publication for final processing.

#2 **Failed** Ratification ballots were returned to the originating task forces for re-work and re-balloting or abandoning.

Table 6 Activities Approved by the GCS between meetings of the TC Chapter

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
None			

Table 7 Authorized Activity

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details^{#1}</i>
None			

#1 SNARFs and TFOFs are available for review on the SEMI web site at: <http://downloads.semi.org/web/wstdsbal.nsf/tfofnarf>



Table 8 Authorized Ballots

#	When	TF	Details
R6980	cycle 4-24	Flammable Gas TF	Line Item Revision to SEMI S2-0821Eb, Environmental, Health, And Safety Guideline For Semiconductor Manufacturing Equipment (Delayed Revision Related to Flammable Substances)
R7108A	cycle 4-24	S1 Revision TF	Line Item Revision to SEMI S2-0821Eb, Environmental, Health, And Safety Guideline For Semiconductor Manufacturing Equipment (Delayed Revision Related to Safety Labels)
R7158	cycle 4-24	S2 Mechanical Design TF	Line Item Revision to SEMI S2-0821Eb, Environmental, Health, And Safety Guideline For Semiconductor Manufacturing Equipment (Delayed Revisions related to lifting equipment and hinged loads (§§ 5.2 and 18.6))

Table 9 Granted a One-Year Extension

#	TF	Title	Expiration Date
None			

Table 10 SNARF(s) Cancelled

#	TF	Title
6784	Fire Protection Task Force	Line Item Revision to SEMI S2, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Changes to materials of construction criterion in fire and smoke risk for pre-evaluation figure)

Table 11 Standard(s) to receive Inactive Status

Standard Designation	Title
SEMI S25-0319	Safety Guideline for Hydrogen Peroxide Storage & Handling Systems

Table 12 New Action Items

Item #	Assigned to	Details
Mar28-2024#1	Kevin Nguyen	To notify the Liquid Chemicals TC (NA and Europe) of the outcome of Reapproval of SEMI S25-0319, Safety Guideline for Hydrogen Peroxide Storage & Handling Systems and invite participation if there is interest in supporting further work.

Table 13 Previous Meeting Action Items

Item #	Assigned to	Details	Status
Nov9-2023#1	Kevin Nguyen	To contact Natalie Shim (SEMI Staff Korea) to get discussion rolling for Korea EHS	Completed
Nov9-2023#2	Kevin Nguyen	To relay the S2 “see” to “refer to” changes to SEMI publication	Completed



1 Welcome, Reminders, and Introductions

1.1 Bert Planting called the meeting to order at 9:01 AM. The meeting reminders on antitrust, intellectual property, and holding meetings with international attendance were reviewed. Attendees introduced themselves.

2 Review of Previous Meeting Minutes

2.1 The TC Chapter reviewed the minutes of the previous meeting.

Motion: Accept the minutes as written.
By / 2nd: By: Lauren Crane / Lam Research
Second: Lucian Girlea / Nikon Precision Inc.
Discussion: None
Vote: 15-0. Motion passed.

3 Ballot Review

For those **Passed** ballots for which the Ratification Ballots are approved, the ballots and line items will be submitted to the ISC Audit & Review Subcommittee for procedural review. For those **Passed** ballots for which the Ratification Ballots are disapproved, the ballots and line items will be returned to the NA EHS TCC for further discussion at its next meeting.

The **Failed** ballot regarding SEMI S8 was returned to the originating task forces for re-work and re-balloting. For the **Failed** ballot regarding SEMI S25, Kevin Nguyen (SEMI Staff) was assigned the action item of notifying the Liquid Chemicals TC (NA and Europe) of the outcome of the ballot and inviting participation if there is interest in supporting further work.

NOTE 1: TC Chapter adjudication of ballots is detailed in the Audits & Review (A&R) Subcommittee Forms for procedural review. The A&R forms are available as attachments to these minutes. The attachment file name for each balloted document is provided under each ballot review section below.

3.1 *Doc. 7159, Line Reapproval of SEMI S25-0319, Safety Guideline for Hydrogen Peroxide Storage & Handling Systems*

3.1.1 **Reject Name: Lauren Crane (LAM)**

Negative #: LAM LC2

Negative Reference: 13.8.1

Negative

The characterization of filtration presenting “serious safety concerns” is ambiguous and perhaps not warranted (depending on what is specifically meant by “serious safety concern” as compared to other types of safety concern). In our experience filters are in fairly common use in hydrogen peroxide systems and can be done without present unacceptable risk.

Some of the considerations that can mitigate risk are to consider the anticipated contaminants that will be available to the HP fluid, and to provide venting (either passive, or scheduled-active) for filter housings.

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Change to the effect of “... presents ~~serious~~ safety concerns”, and present some of the methods industry has been using to evaluate and manage the related risks such as

- Reviewing the contaminants that could be present in the HP fluid and their effects on HP when entrained in the filter media, and



Providing programed venting of the filter housing to reduce accumulating pressure in filter housings resulting from HP decomposition.

3.1.2 **Motion:** Negative is related and persuasive.

Reason: None

By: Lauren Crane / Lam Research

Second: Lucian Girlea / Nikon Precision Inc.

Discussion: None

Result: 14-Y 0-N Voting Result: Pass - 100.00%

3.1.3 **Final Action**

Motion: This Document failed TC Chapter review and work will be discontinued.

Reason: None.

By: Eric Sklar / Safety Guru, LLC

Second: Sean Larsen / Lam Research Corporation

Discussion: None

Result: 15-Y 0-N Voting Result: Pass - 100.00%

Attachment: S25notes_es25mar24a_ah25mar24a

3.2 Doc. 6980, Line Item Revision to Line Item Revision to SEMI S2-0821Eb, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Delayed Revision Related to Flammable Substances)

3.2.1 Line Item 1 - Delayed Revision Related to Flammable Substances

- This document **passed** the TC Chapter review with Technical Changes, a Ratification Ballot to be issued. Refer to attachment below for full details.
- **Attachment: 6980 A&R rev1**

3.3 Doc. 7108A, Line Item Revision to Line Item Revision to SEMI S2-0821Eb, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Delayed Revision Related to Safety Labels)

3.3.1 Line Item 1 - Delayed Revision Related to Safety Labels

- This document **passed** the TC Chapter review with Technical Changes, a Ratification Ballot to be issued. Refer to attachment below for full details.
- **Attachment: 7108 A&R Rev1**

3.4 Doc. 7158, Line Item Revision to SEMI S2-0821Eb, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Delayed Revisions related to lifting equipment and hinged loads (§§ 5.2, 18))

3.4.1 Line Item 1 - Delayed Revisions related to lifting equipment and hinged loads (§§ 5.2, 18.6)

- This document **passed** the TC Chapter review with Technical Changes, a Ratification Ballot to be issued. Refer to attachment below for full details.
- **Attachment: 7158 A&R**



3.5 Doc. 7134, Revision to SEMI S8-0218, Safety Guideline for Ergonomics Engineering of Semiconductor Manufacturing Equipment

3.5.1 Reject Name: Lauren Crane (LAM)

Negative #: LC4

Negative Reference: 2.2

Negative Text:

What those tasks could be is very subjective.

This paragraph should be, but is not, an exact complement to 3.6. 3.6 is worded in terms of 'components' rather than tasks, and implies viewing is a task, and constrains the reason for access.

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Change to the effect of "Provisions of SEMI S8 apply to operation, service, and maintenance tasks (including visual access) that occur at least once every 5 years as determined by the equipment supplier".

See also response for 3.6.

3.5.2 Motion: Negative is related and persuasive.

Reason: None

By: Lauren Crane / Lam Research

Second: Andrew Petraszak / TEL Technology Center America

Discussion: None

Result: 11-Y 0-N Voting Result: Pass - 100.00%

3.5.3 Final Action

Motion: This Document failed TC Chapter review and will be returned to the TF for rework.

Reason: None.

By: Andrew Petraszak / TEL Technology Center America

Second: Lauren Crane / Lam Research

Discussion: None

Result: 13-Y 0-N Voting Result: Pass - 100.00%

3.5.4 This document **failed** and was returned to TF for rework

4 Subcommittee & Task Force Reports

4.1 S3 Revision TF (Andy Petraszak)

- TF continues working on doc. 6830, Revision to SEMI S3-1211E (Reapproved 1017) Safety Guideline for Process Liquid Heating Systems.
 - Working through comments throughout the document.
 - Found updates needed to the drawings within the Appendix on the liquid heating examples.
 - Does anyone have or know where the original drawings may be?
 - Continue TF meetings to prepare a draft ballot.
 - Not asking for ballot authorization at this time.

Attachment: S3 Report Spring 2024

4.2 S2 Mechanical TF (Andy Petraszak)

- Doc. 7158, Line Item Revision to SEMI S2-0821EB, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Subject: Delayed Revisions related to lifting equipment and hinged loads (§§ 5, 18.6, and 18.7))



- Passed TC Chapter review with technical changes. Ratification ballot will be issued.

Attachment: S2 Mech Report Spring 2024

4.3 Environmental Performance Rating (EPR) TF (Ben Gross)

- Achievements Dec – Mar 2024
 - Test conditions including temperature setpoints defined based on industry applications
 - Operation modes of pumps agreed, adopt SEMI S23 definitions.
 - Definition of annual usage rates (Process / Free / Off) agreed based on SEMI S23 definition.
 - Equivalent energy usage agreed to be directly the performance indicator.
 - Application-specific ratings agreed to support purchase decision-making.
 - Calculation of equivalent energy based on SEMI S23 guidelines agreed to be used.
 - Definition of pump size segments proposed for better comparability.
 - Definition of energy rating segments proposed.
 - Qualifying material usage as **additional** performance indicator postponed to a later revision.
- Next steps:
 - Agreeing on open technical details – Nov/Dec 2023.
 - Data collection / understand spectrum of pump performance (high/low efficiency) – Apr 2024
 - Start drafting standards proposal – Start end of 2023.

Attachment: 20240327 Environmental Performance Metric - TF Update

4.4 S10 Risk Assessment TF (Eric Sklar)

- Since the Fall Meetings
 - Doc 7109, Delayed revisions to SEMI S1, S2, and S30 related to risk published.
 - Addition, to SEMI S10, of a NOTE pointing out the availability, on SEMI’s web site, of an Excel workbook for collecting and compiling risk analyses, published in -0423E Revision of SEMI S10.
 - Further work on SEMI S10 (SNARF 7169) in nearly weekly telecons:
 - Separation of Building/Facility Risk into an RI
 - Modification of process flow charts
 - Application of SEMI S10 to observed (as distinguished from, or in addition, to foreseen) events
 - Separation of “EHS Risk” (personnel and environment) from “Commercial Risk” (equipment)
 - Redefinition Severity categories for Equipment

Attachment: S10_Report_es28mar24a

4.5 Flammable Gas TF (Bert Planting)

- Doc. 6980, Line Item Revisions to SEMI S2-0821, Environmental, Health, and Safety Guideline for Semiconductor Manufacturing Equipment (Re: Sections 13.7 and 23.5.5)



- Passed TC Chapter review with technical changes. Ratification ballot will be issued.

Attachment: Spring report flammable substances V1

4.6 Manufacturing Equipment Safety Subcommittee (MESSC) (Lucian Girlea)

- Discussed Emergency egress and emergency rescue
 - Request (LC) – should S2 consider addressing this (as it is in Machinery Regulation)?
- Request (CW) – change S2 13.4.9 to remove industrial control panel reference

Attachment: MESSC Report - SEMI 2024 Spring

4.7 S2 Major Revision TF (Lucian Girlea)

- Continuing to make progress.
 - updating content, addressing conflicts, clarifying statements
- Very good TF participation in weekly meetings.
- Eric Sklar is the TF Technical Editor
- Cross-pollination with other EHS TFs (e.g., S1, S10, S8):
 - new items routed to the S2 MR TF as the proper forum
 - ideas discussed by the S2 MR TF being adopted by other TFs
- No input yet from the Japan Liaison TF (JA-S2 revision LTF).
 - Mashiro-san working directly with S2 MR TF when schedule permits
- Continue the revision work under the same format.
 - Will ask on Thursday to maintain the same timeslot for the TF meetings.
- No definite timeline, expecting to implement the following actions.
 - Work on the draft to complete a first pass addressing all issues found
 - Clean up the comments, update the draft with the latest S2 release
 - Send an information ballot out, for validation and to gather new concerns
 - Submit SNARF, coordinate with other TFs, work on S2 MR ballot

Attachment: S2 Major Revision Report - SEMI 2024 Spring

4.8 S6 Ventilation TF (Eric Sklar)

- The Task force has been working on Doc 7133 Revision of SEMI S6-0618 - Environmental, Health, and Safety Guideline for Exhaust Ventilation of Semiconductor Manufacturing Equipment, in telecons most weeks
 - considering
 - the ballot responses (103 Technical and ~120 Editorial items) to the SEMI S6 Reapproval ballot, which was found, at SEMICon West, to have failed,
 - the requested corrections have been compiled in an annotated copy of SEMI S6 for TF consideration,

- other things that have arisen during TF discussions (The count of other-than-editorial items is now 134.)
- have made substantial progress.
 - agreed how to address the ~120 editorial items
 - have resolved 70 of the technical items, mostly by agreeing what changes to propose in the 7133 ballot
 - have agreed in principle how to address another 54 of the technical items, but those are awaiting drafting by one of the TF Leaders
 - there are 6 items awaiting work by TF members, other than the aforementioned stuckee
 - postponed consideration of 1 item until other work has been done
- but, the TF has yet to reach consensus on 3 of the technical items:
 - What duct diameters and flow rates to provide as examples
 - Suitability criteria for toxic gas detectors
 - Review of the role of Related Information 3 General Design Recommendations, including:
 - the RI's consistency with the normative text of SEMI S6
 - whether some of the content of the RI should be moved to normative sections
- TF Plans
 - Hold weekly telecons to work on revisions.
 - No ballot is requested.

Attachment: S6_Report_es28mar24a

4.9 S23 Global TF (Lauren Crane)

- Near Term History
 - Meetings have focused on our continued review of the SEMATECH “Application Guide and Total Equivalent Energy (TEE) CalcII User’s Guide” - Technology Transfer #06094783D-ENG and identifying information that we would like to include in the S23 RI x.
 - We have completed our review of measuring instrument recommendations
 - We are now working through energy saving technique recommendations
 - Some folks from the IRDS roadmap energy efficiency team have been working in the TF and plan to recommend at least a reference to their S23 related document which focuses on factory-level measurements.
 - Meet weekly for 1 hour to work on the ballot.
 - Nominal meeting schedule to be set in Committee meeting – aiming to continue with Thursdays 8-9am US Central.

Attachment: 2024 S23 US Spring TF mtg & rpt Crane r1

4.10 S2 Seismic Liaison TF (Lauren Crane)

- No meeting during Spring 2024. The TF is in sleeping mode as there was no urgent issue.

4.11 Fire Protection TF (Eric Sklar)

- Old Business (items assigned to TF members, but no proposals have, as yet, been submitted to the TF)



- Adding performance criteria (Such as effectiveness, fire size to be considered) for detection and protection systems.
- Adding design criteria (such as treatment of pyrophoric materials) for detection and protection systems.
- Should exhaust ventilation be reduced or stopped if a fire is detected?
- New Business
 - Request from Lauren Crane (11 March 2024 e-mail to TF leaders):
 - I propose that the Fire Protection TF take up an action to create an S14 ballot to bring its terminology in line with S10 – particularly regarding the terms risk, hazard, mishap, and harm.
- Plans
 - Telecons to discuss reconciling SEMI S14's terminology with SEMI S10's after SEMICon West

Attachment: FireProt_Report_es28mar24a

4.12 S1 Labels TF (Eric Sklar)

- Previous Business
 - SEMI S1-0923 Safety Guideline for Equipment Safety Labels, has been published
 - Is a rewrite of the previous version.
- New Business
 - Adjudication of Doc 7108A, Line Item Revision to SEMI S2-0821Ea, Environmental, Health, And Safety Guideline For Semiconductor Manufacturing Equipment (Delayed Revision Related to Safety Labels)
 - **Passed** TC Chapter review with technical changes. Ratification ballot will be issued.

Attachment: 7108a_CompiledResponses_tf26mar24b_es28mar24a

Attachment: S1_Report_es28mar24a

4.13 Energetic Materials TF (Eric Sklar)

- Old Business
 - Topics TF believes should be addressed by a training program.
 - Improper adoption of S30
 - Cold traps accumulate material, creating a hazard that needs to be addressed.
 - Still no report of an integrated risk assessment having been done.
 - Some S30 related questions have been raised by 1 or 2 device manufacturers.
 - Discussion 26 March 2024: No news
- Plans
 - No immediate plans for telecons, but would like a slot assigned on the schedule in case matters requiring TF discussion arise.

Attachment: EnergeticMatls_Report_es28mar24a



4.14 S2 Control of Hazardous Energy (CoHE) TF (Eric Sklar)

- Task Force Plans & Requests
 - Will resume TF telecons when the TF leader has prepared a draft, based on discussions to date, for the TF to review.
 - Will address revising/replacing SNARF when we have a better understanding of what we'll be proposing for ballot.
 - Ballot authorization: No request of 28 March 2024 NA EHS TCC meeting, as TF does not foresee having a ballot ready prior to SEMICon West.

Attachment: S2_CoHE_Report_es28mar24a

4.15 S12 Decontamination TF (Eric Sklar)

- Work on SEMI S12 since Fall West
 - Task Force was inactive until the Cycle 2 ballots were submitted to allow members to focus on other SEMI EHS Standards work.
 - Recent telecons have been poorly attended (average of 2 participants) .
 - In the few telecons the TF has held, we cleared a couple more items we had identified for discussion.
 - Most of the remaining 16 items are either awaiting work by the Task Force leader or on hold pending the resolution of those items.
 - 26 March 2024 Discussion
 - Does anyone think we both can and should try to get this into Cycle 4 or 5 (i.e., to ballot in time for adjudication at SEMICon West)?
 - 26 March 2024:
 - LC prefers setting target of having a ballot draft ready for discussion at SEMICon West and requesting ballot authorization at the West NA EHS TCC meeting.
 - No dissent
- Task Force Plans & Requests
 - Continue work on SEMI S12 rewrite draft, with a target of having it ready for TF review at SEMICon West
 - SNARF will need to be extended before November 2024, will request at West
 - No ballot authorization request at Spring Meetings

Attachment: S12(decon)_Report_es28mar24a

4.16 S8 Ergonomics TF (Paul Schwab)

- Task Force has been meeting regularly since January 2022 to work on changes to SEMI S8 and balloted a major revision in Cycle 2, 2024.
- Ballot 7134, Major Revision to SEMI S8-0218, failed TC Chapter review.
- Task Force will resume meeting on Fridays at 9:00 am Pacific time starting April 5th
- Support documents are located in the SEMI-S8 Task Force document library:
<https://connect.semi.org/communities/community-home?CommunityKey=c1526656-40a4-4245-af86-34d3ecc68624>

Attachment: SEMI-S8_TF_summary_28mar2024

4.17 S7 TF (Sean Larsen)

- Drafting Doc. 6907, Revision to SEMI S7-0515, Safety Guideline for Evaluating Personnel and Evaluating Company Qualifications.
- No teleconferences held lately.
- Ballot is getting cleaned up.
- Two new topics came up:
 - ISO Certification
 - SEMI 3rd party qualification
- If anyone wants to get involved, please send an email to Sean.

4.18 S2/S22 TF (Chris Evanston)

- Edit the draft document.
- Plans:
 - Hold Teleconferences between now and West.
 - No ballot is planned. If anyone wants to get involved, please send an email to Chris.

4.19 Other Documents of Interest

4.19.1 F47 TF

- Sean Larsen mentioned F47 is continuing to have discussion on voltage sags on 3 phases vs 1 phase. There are conflicting directions on which way to go. There is no data provided from the end user suggesting which ways to proceed.

4.19.2 BIM TF

- Sean Larsen reported the Building Information Modeling (BIM) activity. The progress is slow. Eric Sklar said the leader plans to reactivate this activity.

4.19.3 Power Grid Harmonics TF

- Sean Larsen is confident that this activity is no longer active.

4.19.4 EMC TF

- Raymond McDaid said there is a proposal from an end user. The basis is to get the tool immune to certain level of magnetic field without impacting the equipment. The goal is for an end user to place a tool anywhere within the fab, not just in a specific location. The discussion is still ongoing.

5 Liaison Reports

5.1 ICRC Liaison (Bert Planting)

- SEMI Working groups
 - US EPA PFAS working group (see presentation)
 - ROHS (see presentation). Input has to be provided to ECHA. Major issue is that several exemptions need to be reapproved for the following period (e.g. mercury lamps)
- New Legislations
 - EU: New input request for REACH legislation



- EU: Batteries regulations. Focus on battery types. New focus on initiative for complete product passport
- US California: Chiller regulations. Has a lot of requirements for different types of chilling units including the GWP of used chilling material
- Japan: identification of plastic parts required for EOL waste fees
- US: NFPA-79 2024 version. Main change is also related to cyber security. (next meeting a more complete update of changes to be prepared)
- Discussion during SEMI-show Korea with customer
 - A team from SEMI had a discussion with a customer (January during SEMI-Con Korea) who complained that SEMI standards should be improved based on what they found in their factory.
 - Presentation from the customer. We discussed the issues presentation and looked like all items they found not according spec was also not according spec from the SEMI standards.
 - SEMI there was 3 presentations on how SEMI works and invited the customer to join the SEMI safety standards committee.
 - Conclusion: At the end the customer left the meeting that they need to reconsider how to continue. Up to now no reach out to SEMI.
- Is SEMI prepared for the future?
 - Is SEMI aware and to prepare in what is going on in our industry and worldwide initiatives
 - How is ESG incorporated in SEMI?
 - How customers are asking compliance to (upcoming) chemical regulations
 - Do we need an initiative on certain types of reporting requested by customers
 - What is the future of SEMI standards auditing?

Attachment: ICRC SEMI-spring 20243

5.2 Other EHS

5.2.1 Taiwan TC Chapter is idle. No further business reported.

5.2.2 Japan EH&S TC Chapter (Kevin Nguyen)

- Last meeting
 - Thursday, December 14, 2023
 - Tokyo Big Sight, Tokyo, Japan + OVTCCM (Hybrid) in conjunction with SEMICON Japan
- Next meeting
 - Wednesday, May 15, 2024
 - SEMI Japan Office, Tokyo, Japan/ OVTCCM (Hybrid)
- S18 Revision Task Force
 - As there are some items to be addressed for revision, more members are welcomed to start revision work.
- 5 Year Review



- S13-0113 (Reapproved 0819) Environmental, Health and Safety Guideline for Documents Provided to the Equipment user for Use with Semiconductor Manufacturing Equipment
- S17-0319 Safety Guideline for Unmanned Transport Vehicle (UTV) Systems

Attachment: EHS JA TC Chapter Liaison Report March 2024_R1

5.2.3 *Korea Meeting report (Chris Evanston)*

- Report on Meeting on Feb 2, 2024 of Korea EHS Standards Support
 - 21 in attendance
 - Samsung presented 3 main safety issues not covered in SEMI S2 – Supported by Photos
 - EMO Palm Activation
 - Redundant Over Temp Needed
 - Pressurized HPMs in lines with connection outside exhaust enclosures
 - Bert Planting: Generic reach out to Samsung to support SEMI standards.
 - Raymond McDaid: Practical issues with SEMI S2 reviews
 - Chris Evanston: How does SEMI standards process work.
 - Discussion
 - General discussion - No need to change S2 to cover Samsung issues because they are already in SEMI S2.
 - What is needed to address Samsung S2 concerns is better S2 evaluations.
 - Major discussion on the problems Samsung driving their own safety specifications causes the industry.
 - A general invitation for them to participate in SEMI standards.
 - Follow Up Thought
 - It may be useful to hold these types of outreach efforts to encourage semiconductor companies not participating in SEMI standards to become involved.

Discussions:

- Raymond McDaid also said the main issue is lack of understanding. Most of their concerns are covered in SEMI S2; had they had a good S2 reviewer, this problem would not have been raised.
- Bert Planting said nothing has happened since this meeting held in February, however, he noticed the KSIA is getting quite active since the meeting took place.
- Raymond McDaid said it may be a good idea for Natalie Shim to invite them again for a follow-up meeting.
- Lauren Crane: The most recent translated version of S2 is not up to date? Chris Evanston said prior to pandemic, they were active, so it may be a good idea to encourage them to participate and translate the latest S2 version.
- Raymond McDaid: AI, which his company uses for translating, is doing as good as a human translator.
- Chris Evanston said it would be an excellent idea to have frequent outreach program to communicate. Sean Larsen also is in agreement with the concept, maybe it should be done annually at SEMICON Korea or every 6 months.

Attachment: Korea EHS Standards Support Meeting Summary

Attachment: Co-Chair Report on Feb Korean Meeting



5.3 RSC report (Sean Larsen)

- Stronger push for use of Connect@SEMI for TF
 - Eric Sklar identified several issues with Connect which he has sent to Kevin. Based on his observation, it is not there yet. But all task forces have a year to implement.
- Confidential materials may not be shown.
 - It may be an issue since anything coming out of a company is marked confidential.
 - Bert Planting also said it is baseline for most companies, whenever an employee sends out via email, it is marked confidential. One can change remove, but it may be harder to do. Sean responded by saying he is not sure if taking out the confidentiality assertion will allow him to send an email or not.

5.4 SEMI Staff Report (Kevin Nguyen)

- SEMI upcoming event
 - SEMICON West, July 9-11, 2024
 - San Francisco, CA
 - SEMICON West Registration is open
 - SEMI Standards discounted rate or complimentary (Expo Pass) link: https://bit.ly/SW_Standards_24
 - 2024 Critical Dates for SEMI Standards Ballots: <https://www.semi.org/en/collaborate/standards/ballots>
- Standards Online Voting System Updated
 - New system went live for Cycle 3, 2024
 - <https://www.semi.org/standards/ballots> or <https://portal.semi.org>
 - The new voting system:
 - Integrates and streamlines sign-in process with various SEMI/Standards member services
 - Aims to bring updated user interface while maintaining functionality that's familiar to voters
 - Improves data management for SEMI internal database
- Regulations and Procedure Manual Updates
 - Regulations (Feb 20, 2024)
 - New definition of "Standards Document"
 - Clarification of confidential presentation materials
 - <https://www.semi.org/sites/semi.org/files/2024-02/Standards%20Regulations%20February%202020%202024.pdf>
 - Procedure Manual (Feb 20, 2024)
 - Clarification on meeting quorum
 - TC Chapter Committee Express Report (CER) timing
 - Deletion of Appendix 4 - Nonconforming Standards Titles
 - <https://www.semi.org/sites/semi.org/files/2024-02/Procedure%20Manual%20February%202020%202024.pdf>
 - The Use of Connect@SEMI for TF Management and Document Development Depository
 - Refer to PM § 6.4.5 Operation of TFs
 - Task Forces have one year from 02/20/24 to implement use of Connect@SEMI. (<https://connect.semi.org>)
 - Once TFs have implemented use of Connect@SEMI, they shall use it to:
 - Maintain the TF member roster up to date.



- Share the working drafts.
 - The default format for working Draft Document sharing shall be Adobe Acrobat PDF.
- Distribute the Draft Document at least one week before ballot submission to SEMI.
- New Meeting Required Elements
 - <https://www.semi.org/sites/semi.org/files/2024-03/Required%20Meeting%20Elements%20March%202024.pptx>
 - Discussion:
 - On the new bullet for confidentiality (marked or unmarked) should not be discussed?
 - How does one know if it is not confidential?
 - If you do not know, then you do not know.
 - On emails, some companies also put confidentiality clauses on email.
- SEMI Standards Publications
 - Total SEMI Standards in portfolio: 1,086
 - Includes 335 Inactive Standards

Attachment: Staff Report March 2024 v4

6 Old Business

6.1 None

7 New Business

7.1 PFAS

7.1.1 Andy Petraszak reported there are various groups dealing with PFAS in which he is participating. To name a few, there is PFAS Consortium in SIA. TSCA also has some initiatives on PFAS. He raised awareness and called for participation. If anyone is interested, please contact Andy.

7.1.2 Sean Larsen mentioned there are numerous definitions on PFAS in 1000+ chemicals. Per Andy, in EPA alone, there are 4 definitions of PFAS.

7.2 5 year review

7.2.1 None. Other than those are being taken by various task forces.

7.3 Upcoming Ballot Authorization

7.3.1 None

7.4 Teleconferences

- Eric Sklar presented and drafted the Google calendar for all EH&S TF teleconferences, which was accepted by consensus for the period between this meeting and the NA EHS TCC meeting during SEMICon West.
 - <https://calendar.google.com/calendar/u/0/embed?src=0dblgh8j8j0im0e8bt4jkbocs4@group.calendar.google.com>



8 Next Meeting and Adjournment

8.1 The next meeting is scheduled for Thursday, July 11, 2024 in conjunction with SEMICON West, San Francisco, CA. Refer to <http://www.semi.org/standards> for the current list of meeting schedules.

There being no further business, a motion was made to adjourn. Adjournment was at 4:19 PM.

Respectfully submitted by:

Kevin Nguyen,
SEMI Standards Operations Manager
Phone: 408-943-7997
Email: knguyen@semi.org

Minutes tentatively approved by:

Sean Larsen (Lam Research)	<Date approved>
Chris Evanston (Salus Engineering International)	<Date approved>
Bert Planting (ASML)	<Date approved>

Table 14 Index of Available Attachments^{#1}

<i>Title</i>	<i>Title</i>
S25notes_es25mar24a_ah25mar24a	FireProt_Report_es28mar24a
6980 A&R rev1	7108a_CompiledResponses_tf26mar24b_es28mar24a
7108 A&R Rev1	S1_Report_es28mar24a
7158 A&R	EnergeticMatls_Report_es28mar24a
S3 Report Spring 2024	S2_CoHE_Report_es28mar24a
S2 Mech Report Spring 2024	S12(decon)_Report_es28mar24a
20240327 Environmental Performance Metric - TF Update	SEMI-S8_TF_summary_28mar2024
S10_Report_es28mar24a	ICRC SEMI-spring 20243
Spring report flammable substances V1	EHS JA TC Chapter Liaison Report_March 2024_R1
MESSC Report - SEMI 2024 Spring	Co-Chair Report on Feb Korean Meeting
S2 Major Revision Report - SEMI 2024 Spring	Korea EHS Standards Support Meeting Summary
S6_Report_es28mar24a	Staff Report March 2024 v4
2024 S23 US Spring TF mtg & rpt Crane r1	

#1 Due to file size and delivery issues, attachments must be downloaded separately. A .zip file containing all attachments for these minutes is available at www.semi.org. For additional information or to obtain individual attachments, please contact Kevin Nguyen at the contact information above.